TRACKS 2006 ATLANTA, GA

Implementing The Tracking Network

breakout ABSTRACT

Abstract No. 35

TITLE

SURVEILLANCE OF CHILDHOOD CANCER: TRENDS, CLUSTERS AND OTHER CONCERNS

TRACK

Network Content

OBJECTIVES

1. Childhood cancer, while a rare disease, often occurs in clusters.

2. Investigations of reported clusters often do not identify plausible etiologies.

3. Assessments of the spatial and space-time pattern of childhood cancers suggest that clustering is rare.

4. Surveillance of the pattern of childhood cancers may provide useful insights.

SUMMARY

The investigation of reported geographic clusters of childhood cancer is a controversial issue. Although public concern is great, with over 1,000 cluster reports filed each year with state health departments, most of which are childhood cancers, some scientist have argued vehemently against their investigation, except in the most extreme circumstances. They argue that since most investigations have not resulted in the detection of new carcinogens or new etiologies, these studies are not a good use of money and other resources. In short, they are concerned about false positives. A complementary problem often not addressed is whether the most extreme childhood cancer excesses are actively considered or investigated. That is, is there a bias in focusing investigations on cluster reports rather than surveillance.

Three previous studies have examined the spatial and space-time distribution of childhood cancers in Europe and found only limited clustering. We have undertaken similar analyses for childhood cancers in Washington State from 1992 to 2001, including a Poisson distribution goodness-of-fit analysis, a Potthoff-Whittinghill analysis, providing both the p-value and beta (estimate of extra-Poisson component of variability), spatial autocorrelation analysis, and a SaTScan analysis for spatial pattern only and space-time pattern.

Our initial results at the county scale show statistically significant clustering only for rarer cancer subtypes (chronic myeloid leukemia, $p<0.005$; Hodgkin's lymphoma, $p<0.03$; sympathetic nervous system tumors, $p<0.009$). These may be artifacts of small numbers of cases. We are conducting analyses at finer spatial scales to better assess the spatial pattern.

AUTHOR(S):

Dan Wartenberg, Ph.D.
University of Medicine and Dentistry of New Jersey

Sylvia Brown, University of Arizona
Martin Kulldorff, Harvard Medical School

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

CDC CENTERS FOR DISEASE CONTROL AND PREVENTION

NATIONAL Environmental Public Health Tracking Program